

Deformation History and Structural Pattern Within an Exploration Concession in the Eastern Potwar Basin (NE Pakistan)

POSTER

R.W. DELL'MOUR* & M. RODGERS*

Structural Data gained from field work carried out in 1992, Satellite TM interpretation and seismic interpretation provides the basis for a Tectono-Kinematic interpretation of a small portion of the Eastern Potwar Plateau (Fig. 1).

The Potwar Basin is part of the Central Fold Belt of Pakistan, the northern portion of which forms part of the Himalayan foreland fold and thrust belt. This deformed belt is a product of the ongoing collision between the Eurasian and Indian plates which forms the northernmost element of the Indus Basin. Compressional deformation throughout the Himalayan foreland is taking place as the Indian Shield is overridden by sediments along its northern margin. In the eastern Potwar deformation is distributed along a broader zone of northeast/southwest trending, tight to overturned anticlines separated by broader synclines.

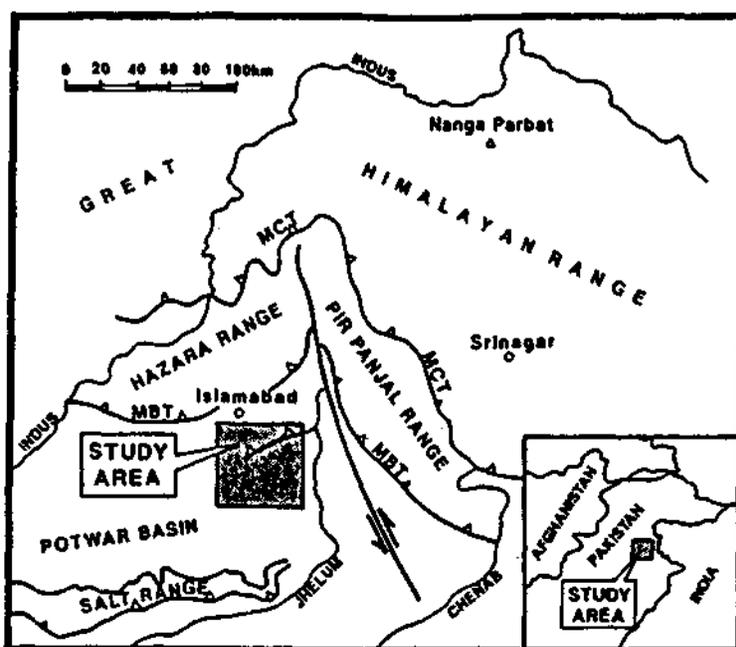


Fig. 1 Tectonic overview of the study area

Three phases of deformation have been observed within this compressional stress field (Fig. 2):

- Phase 1: Thrusting and folding WNW/ESE
- Phase 2: Strike-slip faulting (W)NW/(E)SE
- Phase 3: Strike-slip faulting NE/SW

*) ÖMV (Pakistan) Exploration, Gerasdorfer Straße 151, A-1210 Vienna, Austria

Intensity of deformation increases to the NW as expressed by the more intensely sheared and compressed Riwat anticline. The easternmost Kallar anticline shows only minor deformation of the crest owing to southeast directed thrusting which does not appear to have significantly disturbed the stratigraphic sequence.

The most extensively developed thrust zone has been observed on the eastern limb of the Buttar anticline although the poorly developed outcrop exposure prevents accurate identification on the Satellite images. South-easterly directed thrusting over several hundreds of metres is likely and lithologic indicators in the kataclastic zone suggest probable detachment within the Kamlials or Chinji Formations.

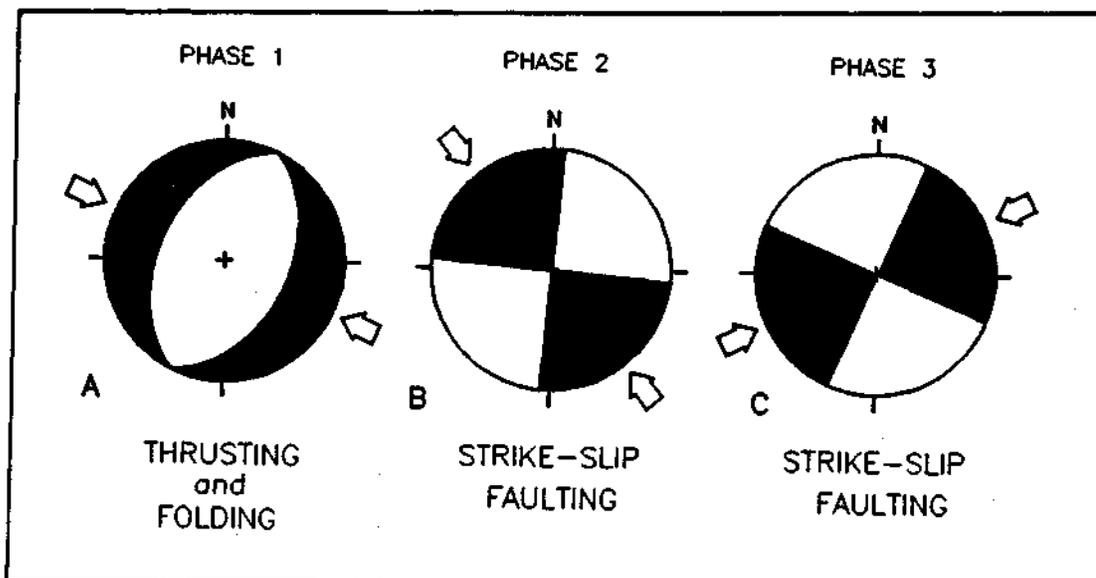


Fig. 2 Beach Ball diagram showing the deformation type and direction of compression: black = compression; white = extension (Angelier 1979).